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A2 } What is claimed is:

1. ~~A collapsible shade structure supported on a surface~~
for defining and enclosing an interior space, the shade
structure comprising:

5 at least three foldable frame members each having a folded
and an unfolded orientation, each frame member comprising [at
least] three sides forming a continuous loop in the unfolded
orientation;

10 a fabric material substantially covering the frame members
to form a side panel for each frame member, each side panel
[having upper portions and] assuming the unfolded orientation of
its associated frame member;

15 each frame member and its associated side panel having a
first side connected to an adjacent frame member and its
associated side panel by first interconnecting hinge means and
a second side connected to another adjacent frame member and
its associated side panel by second interconnecting hinge
means; and

20 the frame members and their associated side panels held
together to form an enclosed interior space with a third side
of each frame member resting on the surface to support the
~~shade structure.~~

25 2. The collapsible shade structure of claim 1 wherein
each hinge means retains the adjacent sides of the adjacent
frame members.

3. The collapsible shade structure of claim 2 wherein each hinge means comprises upper and lower sleeve retaining portions, each sleeve retaining portion retaining the adjacent sides of the adjacent frame members.

5 4. The collapsible shade structure of claim 2 wherein each hinge means comprises a sleeve retaining portion retaining the adjacent sides of the adjacent frame members.

5. The collapsible shade structure of claim 3 wherein each hinge means further comprises an outside sleeve which
10 retains a portion of the upper and lower sleeve retaining portions, and the adjacent sides of the adjacent frame members.

6. The collapsible shade structure of claim 2 wherein the fabric material is provided with frame retaining sleeves for retaining a portion of the frame members.

15 7. The collapsible shade structure of claim 1 wherein each frame member has a triangular configuration.

8. The collapsible shade structure of claim 1 further including a floor portion interconnecting lower portions of the side panels.

20 9. The collapsible shade structure of claim 1 further including at least one vent for providing ventilation to the interior of the structure.

10. A collapsible shade structure, comprising:
a plurality of smaller collapsible structures, each
supported on a surface for defining and enclosing an interior
space, each of the plurality of smaller collapsible structures
5 comprising:

at least three foldable frame members each
having a folded and an unfolded orientation, each
frame member comprising at least three sides forming
a continuous loop in the unfolded orientation;

10 a fabric material substantially covering the
frame members to form a side panel for each frame
member, each side panel having upper portions and
assuming the unfolded orientation of its associated
frame member;

15 each frame member and its associated side panel
having a first side connected to at least one other
adjacent frame member and its associated side panel
by first interconnecting hinge means and a second
side connected to at least another adjacent frame
20 member and its associated side panel by second
interconnecting hinge means; and

the frame members and their associated side
panels held together to form an enclosed interior
space with a third side of each frame member resting
25 on the surface.

11. The collapsible shade structure of claim 10 wherein each hinge means retains at least two adjacent sides of at least two adjacent frame members.

5 12. The collapsible shade structure of claim 11 wherein each hinge means comprises upper and lower sleeve retaining portions, each sleeve retaining portion retaining at least two adjacent sides of at least two adjacent frame members.

10 13. The collapsible shade structure of claim 11 wherein each hinge means comprises a sleeve retaining portion retaining at least two adjacent sides of at least two adjacent frame members.

15 14. The collapsible shade structure of claim 12 wherein each hinge means further comprises an outside sleeve which retains a portion of the upper and lower sleeve retaining portions, and at least two adjacent sides of at least two adjacent frame members.

15. A method of collapsing a collapsible shade structure supported on a surface for defining and enclosing an interior space, the shade structure comprising at least three foldable frame members each having a folded and an unfolded orientation, each frame member comprising [at least] three sides forming a continuous loop in the unfolded orientation, the shade structure further comprising a fabric material substantially covering the frame members to form a side panel for each frame member, with each frame member and its associated side panel having a first side connected to an adjacent frame member and its associated side panel by first interconnecting hinge means and a second side connected to another adjacent frame member and its associated side panel by second interconnecting hinge means, and the frame members and their associated side panels held together to form an enclosed interior space with a third side of each frame member resting on the surface to support the shade structure, the method comprising the steps of:

urging the side panels and their corresponding frame members on top of each other about the hinge means to have the side panels and frame members overlying each other; and

twisting and folding the overlaying side panels and frame members to form a plurality of concentric frame members and side panels to substantially reduce the size of the shade structure.



CLAIMED CLAIMS

U.S. PATENT NO. 5,301,705

1. A foldable tent, having a top, which can be transformed from a fully collapsed configuration to a self supporting expanded configuration and vice versa,

the tent comprising three or more joined together wall members, each wall member having a flexible frame formed of a single loop of coilable material when expanded and overlapping loops when collapsed and a wall panel of foldable material having a peripheral channel for constraining the frame into a generally triangular or rectangular shape with two sides and a base for each wall member with the sides extending from the top of the tent to said base when the wall panel is expanded,

in which the sides of each wall member are securely and hingably joined to the adjacent sides of adjacent wall members from said top to said base so that the adjacent sides are held at least generally parallel to one another when the tent is in its expanded configuration.

16. A tent according to claim 1 in which the adjacent sides are each joined together and separated from one another by a respective elongate strip of foldable material extending along and between the sides of the wall members.

17. A tent according to claim 1 including a tent floor formed of foldable material which extends between and joins together the bases of the wall members.

See tent 30, roof 86, FIGS. 1 and 11(A)-11(F).

See column 3, lines 10-57, FIGS. 1 and 2, and:

flexible frames 34, 38, 42 and 46;

wall members 70, 74, 78 and 82;

peripheral channels 54, 58, 62 and 66;

FIG. 9 (rectangular) and column 4, line 64;

See FIGS. 1, 2 and 9 which show sides extending from the top of the tent to the base.

See column 2, lines 5-7 and FIG. 1.

See FIGS. 1 and 13 and column 2, lines 5-7.

See FIGS. 1 and 13 and column 3, lines 50-52.

COPIED CLAIMS

U.S. PATENT NO. 5,301,705

18. A tent according to claim 1, including a foldable roof panel which extends between and connects the apexes of the triangles together or the tops of the rectangles.

See roof 86 of FIGS. 1 and 6A, column 3, lines 45-49, or roof 258 of FIG. 9, column 4, line 67 to column 5, line 2.

19. A tent according to claim 1, including ground ties fixed to the tent generally in alignment with central axes parallel to each pair of adjacent sides of wall members.

See ties 88 and column 3, lines 52-54.

20. A tent according to claim 1, in which each wall is a well-rounded triangular or rectangular shape when expanded.

See FIGS. 1 and 9.

21. A tent according to claim 1, in which one or more of the panels is provided with a closable opening to form a respective door of the tent.

See door 90 and column 3, lines 58-68.

22. A tent according to claim 1, in which at least one of the panels is formed of transparent or translucent material.

See column 3, lines 38-39, where sheet fabrics and films could be transparent or translucent.

23. A tent according to claim 1, wherein said sides of each wall member are joined to adjacent sides of adjacent wall members inwardly of said peripheral channel with the peripheral channel and associated frame for each wall member being free of the channel and associated frame of each other wall member.

Inward joint shown in FIG. 13, where the channels and frames of one wall member are free of the channels and frames of another wall member.

COPIED CLAIMS

24. A foldable tent, having a top, which can be transformed from a fully collapsed configuration to a self supporting expanded configuration and vice versa,

the tent comprising three or more joined together wall members, each wall member having a flexible frame formed of a single loop of coilable material when expanded and overlapping loops when collapsed; and

a wall panel of foldable material having a peripheral channel for constraining the frame into a generally triangular shape defining two sides, a base and an apex for each wall member with the sides extending between said apex and said base and said apex being located at the top of the tent when the wall panel is expanded;

said sides of each wall member being securely and hingably joined to adjacent sides of adjacent wall members from said apex to said base so that the adjacent sides are held at least generally parallel to one another when the tent is in its expanded configuration.

25. A foldable tent, having a top, which can be transformed from a fully collapsed configuration and vice versa, the tent comprising three or more joined together wall members,

U.S. PATENT NO. 5,301,705

See tent 30, roof 86, FIGS. 1 and 11(A)-11(F).

See column 3, lines 10-57, FIGS. 1 and 2, and:

flexible frames 34, 38, 42 and 46;

wall members 70, 74, 78 and 82; peripheral channels 54, 58, 62 and 66;

See FIGS. 1 and 2 which show sides extending from the apex of the tent to the base.

See column 2, lines 5-7 and FIG. 1.

See tent 30, roof 86, FIGS. 1 and 11(A)-11(F).

COPIED CLAIMS

each wall member having a flexible frame formed of a single loop of coilable material when expanded and overlapping loops when collapsed; and

a wall panel of foldable material having a peripheral channel enclosing said frame and constraining the frame into one shape from the group consisting of triangular and rectangular shapes defining two sides and a base for each wall member with the sides extending from the top of the tent to said base when the wall panel is expanded; said sides of each wall member being securely and hingably joined to adjacent sides of adjacent wall members inwardly of said peripheral channel with the adjacent sides held at least generally parallel to and spaced from one another when the tent is in its expanded configuration.

26. A tent according to claim 25 wherein the adjacent sides of adjacent wall members are joined together and spaced from one another by an elongate strip of foldable material extending along and between said adjacent sides.

27. A tent according to claim 26 wherein said elongated strips between adjacent sides of adjacent wall members are connected together at the top of the tent to define a foldable roof panel.

28. A tent according to claim 26 wherein said adjacent sides are joined together from the top of said tent to said base of each wall member.

U.S. PATENT NO. 5,301,705

See column 3, lines 10-57, FIGS. 1 and 2, and: flexible frames 34, 38, 42 and 46;

wall members 70, 74, 78 and 82; peripheral channels 54, 58, 62 and 66;

FIG. 9 (rectangular) and column 4, line 64;
See FIGS. 1, 2 and 9 which show sides extending from the top of the tent to the base.

See column 2, lines 5-7 and FIG. 1.

Inward joint shown in FIG. 13, where the adjacent sides are parallel to and spaced from one another.

See FIGS. 1 and 13 and column 2, lines 5-7.

See roof 86, FIGS. 1 and 6A and column 3, lines 45-49.

See FIGS. 1 and 9.